



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,941	04/17/2004	Charles D. Kim	EMP-140US	1621
24314	7590	02/24/2005	EXAMINER	
JANSSON, SHUPE & MUNGER, LTD 245 MAIN STREET RACINE, WI 53403			GUADALUPE, YARITZA	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

2

<b>Office Action Summary</b>	<b>Application No.</b> 10/826,941	<b>Applicant(s)</b> KIM, CHARLES D.	
	<b>Examiner</b> Yaritza Guadalupe McCall	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3, 6 – 9 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohner ( US 5,709,034 ) in view of Baker et al. ( US 5,406,714 ).

In regards to claim 1, Kohner discloses a device which will allow to achieve the step of mounting a vial ( 32, 90 ) in a level ( 12 ) providing for increased visibility of the vial, the method comprising the step of providing the level ( 12 ) with a recess ( 56 ) and a measuring surface ( 14, 16 ); positioning the vial ( 90 ) in the recess ( 56 ) at an angular relationship (perpendicular to the measuring surfaces as shown in Figure 1 ) to the measuring surface; and enclosing the vial within the recess with a ring member ( 20, 40 ), the ring member comprising front and rear portions ( See Figure 2 ) with the vial positioned therebetween ( See Figure 5 ).

With respect to claim 2, Kohner also discloses a device wherein the ring member ( 20 ) is a first ring member with first front and rear portions ( See Figure 2 ), the method further comprising enclosing the first ring member with a second ring member having front and rear portions.

In regards to claim 3 : Kohner teaches a device having ring members ( 40, 44, 48 ) having front and rear portions ( as shown in Figure 2 ) and also provided with wing members ( 46 ) having apertures ( 49 ). Kohner discloses an alternate arrangement for securing the vial in place which uses said apertures ( 49 ) of the wing members in cooperation with fasteners / ribs ( 74 ) provided on a securing cap ( 30 ) which will receive and retain the vial in fixed relationship to the device by securing the first and second ring members to the level ( See Column 4, lines 12 – 26 ) and finally receiving the vial once the rings member is secured within said securing cap (30).

In regards to the method step as stated in claim 6, Kohner teaches a device wherein the first and second ring members ( 20, 40, 44 ) are bonded together before the vial is enclosed in the recess ( See Figure 3 and Column 3, lines 18 – 26 ).

Regarding claim 7, Kohner discloses a level ( 12 ) having a vial ( 32, 90 ) secured thereto, the level comprising a body ( 12 ) having a measuring surface ( 14, 16 ) and a recess ( 56 ); a vial ( 32, 90 ) positioned in the recess at an angular relationship ( i.e., perpendicular ) to the

Art Unit: 2859

measuring surface ( 14, 16 ); and a ring member ( 40, 44, 48 ) enclosing the vial within the recess ( 56 ), the ring member ( 40, 44, 48 ) comprising front and rear portions with the vial positioned therebetween.

With respect to claim 8, Kohner further discloses the ring member ( 40, 44, 48 ) being a first ring member with first ring member portions, the level further comprising a second ring member enclosing the first ring member, the second ring member having front and rear portions (See Figure 2).

In regards to claims 9 and 15, Kohner discloses a level wherein the second portions include wing members ( 46 ) having apertures ( 49 ) therein, the apertures receiving fasteners to secure the second ring member to the level. Kohner discloses an alternate arrangement for securing the vial in place which uses said apertures ( 49 ) of the wing members in cooperation with fasteners / ribs ( 74 ) provided on a securing cap ( 30 ) which will receive and retain the vial in fixed relationship to the device by securing the first and second ring members to the level (See Column 4, lines 12 – 26 ) and finally receiving the vial once the rings member is secured within said securing cap (30).

With respect to claim 12, Kohner teaches a device wherein the first and second ring members are bonded together ( See Figure 3 ) prior to receiving the vial ( 32, 90 ).

Regarding claim 13, Kohner discloses a level having a vial secured thereto, the level comprising a body ( 12 ) having a measuring surface ( 14, 16 ) and a recess ( 56 ); a vial (32, 90) positioned in the recess ( 56 ) at an angular relationship, i.e. perpendicular, to the measuring surface ( 14, 16 ); and a ring member ( 40, 44, 48 ) enclosing the vial within the recess, the ring member engaging the vial ( 32, 90 ) and the body ( 12 ), whereby the vial is protected by the level and ring member while visibility of the vial is enhanced.

In regards to claim 14, Kohner discloses the vial ( 32, 90 ) including a central portion where a bubble rests when the vial is level, said portion defined by the two center parallel lines where the bubble ( 34 ) is retain within as shown in Figure 5.

Kohner does not discloses the first and second portions of the ring member having beveled edges forming a funnel-shaped surface as stated in claims 1 – 2, 7 – 8 and 13, and wherein said slope line intersects the central portion as stated in claim 14.

With respect to the beveled edges as stated in claims 1 – 2, 7 – 8 and 13 - 14 : Baker et al. discloses a level vial assembly having a level ( 10 ) provided with a recess ( 20, 24 ) for receiving a pair of vials ( 36 ), and enclosing the vials with ring members ( 30 ) having beveled edges ( 66 ) forming a funnel-shaped surface defining slope lines that intersect the vial, in order to help increase the visibility of the vials during use. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device

Art Unit: 2859

disclosed by Kohner by providing beveled edges to the outer edges of the ring members as taught by Baker et al. in order to help increase the visibility of the vials during use.

3. Claims 4, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohner (US 5,709,034) in view of Baker et al. ( US 5,406,714 ), as applied to claims 1 – 3, 6 – 9, 12 – 13 and 15 above, and further in view of Macdermott et al. ( US 4,407,075 ).

Kohner and Baker et al. disclose a device as stated in paragraph 2 above.

Kohner and Baker et al. do not disclose the first and second ring members having contrasting colors to outline the vial as stated in claims 4, 10 and 16.

With respect to claims 4, 10 and 16 : Kohner and Baker disclose a device having a vial (32, 90) received within a first and second ring member ( 40, 44, 48 ) but do not disclose the particular color of these members. MacDermott et al. discloses, as part of its background of the invention, the problems encountered by construction workers or any user when reading bubble vials provided on level devices. MacDermott et al. identifies poor lighting and dark color working surfaces as impediments to the user to accurately read a bubble vial. For these reasons, and in an attempt to enhance or intensify the bubble image, the use of luminescent, reflective or color contrasting backgrounds are used when constructing a level device ( See Column 1, lines 21 – 39 of MacDermott et al. ). Therefore, it would have been obvious to a person having

Art Unit: 2859

ordinary skill in the art at the time the invention was made to modify the ring members disclosed b Kohner and Baker by providing contrasting colors on said first and second ring members as taught by MacDermott et al. in order to outline the vial and enhance and intensify the bubble image at any type of lighting conditions.

4. Claims 5, 11, 14 and 17 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohner ( US 5,709,034 ) in view of Baker et al. ( US 5,406,714 ) in view of Macdermott et al. ( US 4,407,075 ), as applied to claims 1 – 4, 6 – 10, 12 – 13, and 15 – 16 above, and further in view of Kivisto et al. ( US Pub. No. 2002/0186123 )

Kohner, Baker et al., and MacDermott et al. disclose a device as stated in paragraphs 2 and 3 above.

Kohner, Baker et al. and MacDermott et al. do not disclose the ring member having a soft elastomeric providing impact absorption to the level as stated in claim 5, 11, 14, and 17 – 19.

In regards to the soft elastomeric as stated in claims 5, 11 and 17 – 19 : Kohner, Baker et al. and MacDermott et al. discloses a level device having first and second ring members ( 40, 44, 48 of Kohner ) for securing and protecting the level vials and provided with a resilient strip (42), but the particular material has not been disclosed.

Kivistos et al. discloses an apparatus provided with a housing ( 12 ) made of an elastomeric, lightweight and corrosion resistant material such as acrylonitrile butadiene-styrene (ABS) ( See paragraph [0024], lines 12 – 16 ), a material with a density of 1.05 ( See table attached in Appendix A below and obtained from [www.polymerweb.com](http://www.polymerweb.com) ), and also gives the option of utilizing a seal assembly ( 36 ) made of thermoplastic rubber, which has a density of 0.92 ( See table attached in Appendix B below and obtained from [www.azom.com](http://www.azom.com) ), lower than that of ABS, in order to provide a tight seal that resists the entry of liquids or gases ( See paragraph [0026], lines 10 – 15) and since ABS and thermoplastic rubber materials are well known types of soft elastomeric materials which will provide impact absorption due to their elastomeric properties, and since Webster's Dictionary 10<sup>th</sup> Edition defines elastomeric as “any of various elastic substances resembling rubber”, and Kivistos et al. already teaches the need and convenience of utilizing thermoplastic rubber as the material for the seal assembly.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device disclosed by Kohner, Baker et al. and MacDermott et al. by making the second ring member out of acrylonitrile butadiene-styrene (ABS) with an outer layer of thermoplastic rubber in order to provide an elastomeric, lightweight and corrosion resistant material ( See Kivistos et al. paragraph [0024], lines 12 – 16 ) and in order to provide a tight seal that resists the entry of liquids or gases ( See Kivistos et al. paragraph [0026], lines 10 – 15 ) which will result in prolonging the life span of the device.

Art Unit: 2859

APPENDIX A

## ABS Acrylonitrile Butadiene Styrene

---

### LEGEND

A = amorphous - Cr = crystalline - C = clear - E = excellent - G = good - P = poor - O = opaque - T = translucent - R = Rockwell - S = Shore

---

STRUCTURE: A

→ SPECIFIC DENSITY: 1.05

WATER ABSORPTION RATE (%): 0.27

ELONGATION (%): 20

TENSILE STRENGTH (psi): 4300

COMPRESSION STRENGTH (psi): 9000

FLEXURAL STRENGTH (psi): 9200

FLEXURAL MODULUS (psi): 300000

IMPACT (IZOD ft. lbs/in): 6.6

HARDNESS: R110

#### FABRICATION

- BONDING: E
- ULTRASONIC WELDING: E
- MACHINING: G

DEFLECTION TEMPERATURE (deg. F)

- @ 66 psi: 206
- @ 264 psi: 193

UTILIZATION TEMPERATURE (deg. F)

- min: -40
- max: 194

MELTING POINT (deg. F): 221

COEFFICIENT OF EXPANSION: 0.000053

ARC RESISTANCE: 80

DIELECTRIC STRENGTH (kV/mm): 16

TRANSPARENCY: T

## APPENDIX B



## Low Density Polyethylene - LDPE

### Polymer Type

Thermoplastic

← Material

### Advantages

Cheap, good chemical resistance. High impact strength at low temperatures. Excellent electrical properties. Can be processed by all conventional methods. Can be transparent in thin film form.

### Disadvantages

Low strength, stiffness and maximum operating temperature. Flammable. Poor UV resistance. High gas permeability ( particularly CO<sub>2</sub> ). Susceptible to environmental stress cracking.

### Typical Properties

Property	Value
Density (g/cm <sup>3</sup> )	0.92
Surface Hardness	SD48
Tensile Strength (MPa)	10
Flexural Modulus (GPa)	0.25
Notched Izod (kJ/m)	1.06+
Linear Expansion (/°C x 10 <sup>-5</sup> )	20
Elongation at Break (%)	400
Strain at Yield (%)	19
Max. Operating Temp. (°C)	50
Water Absorption (%)	0.01
Oxygen Index (%)	17
Flammability UL94	HB
Volume Resistivity (log ohm.cm)	16
Dielectric Strength (MV/m)	27
Dissipation Factor 1kHz	0.0003
Dielectric Constant 1kHz	2.3
HDT @ 0.45 MPa (°C)	50
HDT @ 1.80 MPa (°C)	35
Material. Drying hrs @ (°C)	NA

## Low Density Polyethylene - LDPE

Page 2 of 2

Melting Temp. Range (°C)	220 - 260
Mould Shrinkage (%)	3
Mould Temp. Range (°C)	20 - 40

**Applications**

particular  
characteristics  
of thermoplastic  
MATERIALS

Chemically resistant fittings, bowls, lids, gaskets, toys, containers, packaging film, film liners, squeeze bottles. Heat-seal films for metal laminates. Pipe, cable covering, core in UHF cables.

Source : Abstracted from Plascams  
For more information on Plascams please visit  
[RAPRA Technology Ltd.](#)



top



*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are considered of relevance to the present application :

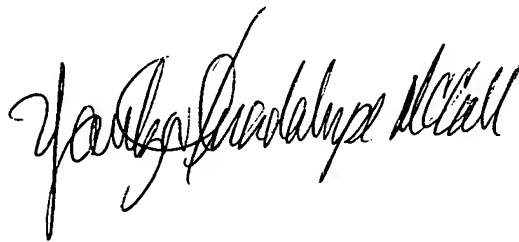
- a. Liao ( US Pub. No. 2003/0079357 )
- b. Paulson et al. ( US 5,459,935 )
- c. Wang ( US Pub. No. 2003/0005592 )
- d. Lindner et al. ( US 5,651,186 )
- e. McSorley Sr. et al. ( US 4,607,437 )
- f. Krumszyn et al. ( US 5,438,761 )
- g. Hutchins et al. ( US 5,199,177 )
- h. Patterson ( US 5,233,760 )
- i. Krehel et al. ( US 6,792,686 )

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaritza Guadalupe McCall whose telephone number is (571)272-2244. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2859

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Yaritza Guadalupe-McCall". The signature is fluid and cursive, with the first name "Yaritza" being the most prominent.

YGM  
February 22, 2005

Yaritza Guadalupe-McCall  
Patent Examiner  
Art Unit 2859